Bechterew claims four nuclei for the oculo-motorius. The main nucleus is dorsal, situated just beneath the anterior corpora quadrigemina and is paired. There is an unpaired median nucleus, an anterior mesial accessory nucleus and a posterior lateral nucleus. He claims that the upper nucleus, described by Darkschewitsch as the nucleus centralis posticus nervi oculomotorii is in reality a part of the trochlearis.

The different nuclei of the oculo-motorius have numerous association fibres, and he traces fibres of communication between the nuclei of the abducens and those of the oculo-motorius.

JELLIFFE.

108. THE ANATOMICAL CONNECTIONS OF THE FRONTAL LOBES Joukowski (Revue de Psych., Russian), 1897, Rev. Neur.

The researches of the author were made by the method of extirpation and the study of secondary degenerations. The following conclusions are given.

The frontal lobes are in immediate connection,

1. With the convolutions of the cingulum and the subcallosal fibres by means of fibres of different lengths.

2. With the anterior region of the optic thalamus by means of fibres which pass in the internal capsule.

3. With the substantia nigra, notably its internal portions.

4. With the anterior part of the protuberance, by means of the "fronto-protuberantial" fibres which pass in the internal parts of the cerebral peduncles.

5. Connection between the two frontal lobes is afforded by fibres which pass in the corpus callosum at its anterior end.

6. In the rabbit the connections between the two frontal lobes are reinforced by a fascicle of fibres which passes in the internal capsule and the anterior commissure.

7. There exists a connection between the gyrus fornicatus and the fornix, by means of fibres passing from the former through the corpus callosum to the swelling of the fornix. VOGEL.

109. ON A MODIFICATION OF THE SUBLIMATE METHOD FOR THE DELINEATION OF NERVOUS TISSUES W. Bevan Lewis (Edinburgh Medical Journal, August, 1897).

The author describes the following:—Pieces of cortex are hardened for from two to three months in Cox's fluid,

5 per cent. solution potass. bichrom.	20
5 per cent. solution hydrarg. bichlor.	20
5 per cent. solution potass. chromate	16
Water	30-40

They are then washed in alcohol for a half hour, mounted and cut. The sections are brought upon a slide, a drop or two of liq. potassae is added to them, and immediately washed off by inclining the slide, and allowing water from a pipette to flow over the specimen. They are then dehydrated in alcohol, cleared in oil of cloves, and mounted in balsam as usual. The addition of the potash has the effect of bringing out the tissue elements with intense blackness, and reveals the finest details of structure more surely and with greater clearness than the modified sublimate or chrome-silver methods. ALLEN.

110. ON THE NATURE OF THE WIEGERT-PAL METHOD. J. S. Bolton (Jour. of Anat. and Physiol., 32, 1898, p. 247).

The author presents a very valuable discussion of the whys and wherefores of the Weigert-Pal methods of staining, with several serviceable modifications. He concludes his extensive studies thus:—

1. The Weigert-Pal process consists in the incomplete oxidation of a stain from mordanted fibrils containing it as a lake, and bears no necessary relation to the occasional presence of a medullary sheath round these.

2. If an ordinary mordant dye, such as logwood, be used, a metallic salt, to mordant the fibres previously, is necessary.

3. If a basic dye, such as methylene blue, soluble in water, be used, double mordanting with tannic acid, and afterwards with tartar emetic is necessary.

4. The ordinary Weigert-Pal result can be obtained by the use of osmic acid alone, as this forms a jet black lake with hematoxylin in the absence of other metals.

5. Almost as good or equally good results can be obtained by the use of a 2 per cent. solution of iron-alum, ammonium molybdate, ferric chloride, stannous chloride, sodium tungstate, uranium acetate and potash alum; and much inferior results arranged in order of their value can be obtained by the use of similar solutions of nickel sulphate, chrome alum, and the chromates, copper acetate, cobalt nitrate, citrate of bismuth and ammonia, ammonia alum, manganese sulphate and zinc sulphate.

6. Osmic acid and usually iron alum cause a practically equal staining of the medullary sheath and of the axis cylinder, whilst the other metals chiefly cause staining of the axis cylinder, the medullary sheaths being either slightly stained or quite unstained, according to the metal employed. JELLIFFE.

111. UEBER DIE MARKSCHEIDENBILDUNG DER GEHIRNNERVEN DES MENSCHEN (On the Development of the Myelin Sheath in the Human Brain). A. Westphal (Arch. f. Psych., 29, 1897, p. 474).

The author has studied the development of the myelin sheaths in the brains of newly-born children and in the fœtus. He comes to the following general results:—

(a) The Cranial Nerves.

1. Two groups are here to be distinguished with reference to the development of the medullary sheath. The motor cranial nerves are myelinated at birth, the sensory and mixed nerves are not myelinated, with the exception of the acoustic, which is myelinated early. The optic nerve at its distal end develops latest.

2. The process of myelination proceeds from the central nervous system towards the periphery.

3. With the exception of the optic, the calibre of the nerve fibres increases with age, so that at maturity the calibre may have increased four or five times.

(b) Comparison with the peripheral spinal system.

1. Myelination occurs earlier in the cranial nerves than in the peripheral nervous system.

2. The differences found existing between motor and sensory nerves in the cranial nervous system could not be found for the peripheral spinal system. JELLIFFE.

PHYSIOLOGY.

112. THE THEORY OF THE MOVEMENT OF THE NEURON AS APPLIED TO NORMAL AND PATHOLOGIC MENTAL AND NERVOUS PROCESSES. F. X. Dercum, M.D. (Gaillard's Med. Jour., 66, 1897, p. 342).

The behavior of the neurons in a case of transient hysterical paralysis may be given as an illustration of the simplest expression